0065059

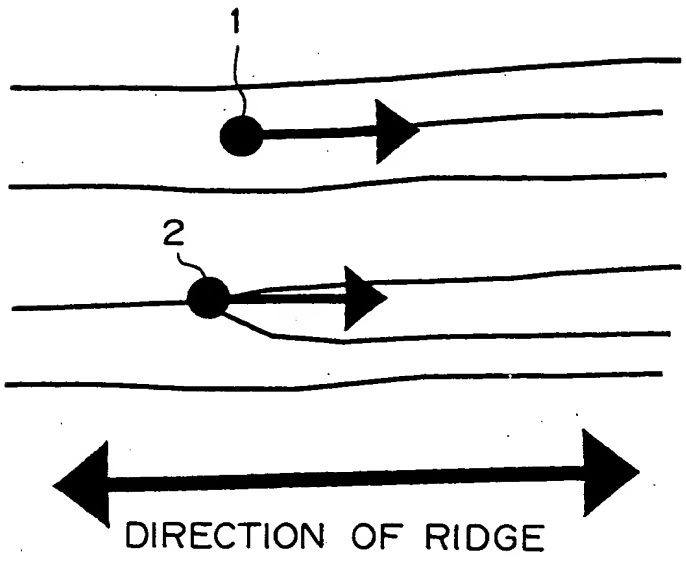


FIG. 1

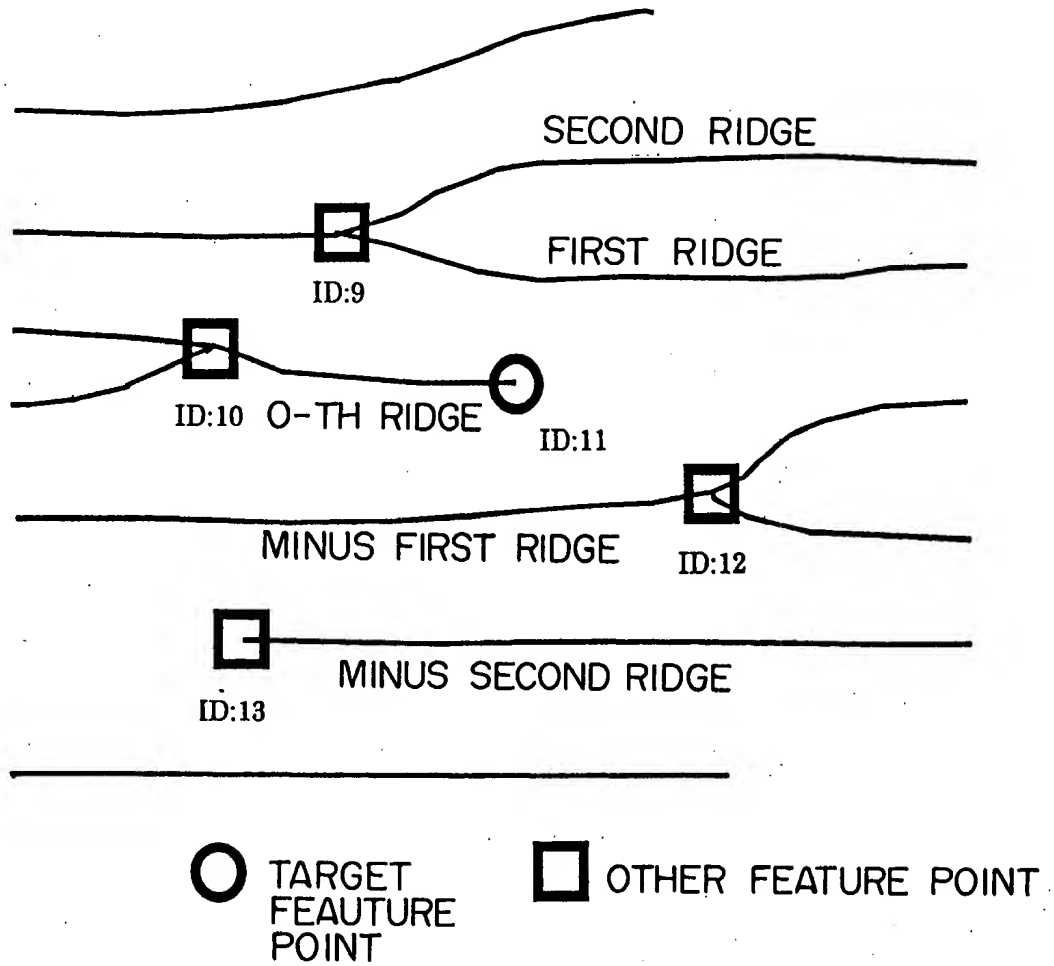

SECOND RIDGE
FIRST RIDGE
ID:9
ID:10 O-TH RIDGE
ID:11
MINUS FIRST RIDGE
ID:12
MINUS SECOND RIDGE
ID:13
TARGET FEAUTURE POINT
OTHER FEATURE POINT

FIG. 2

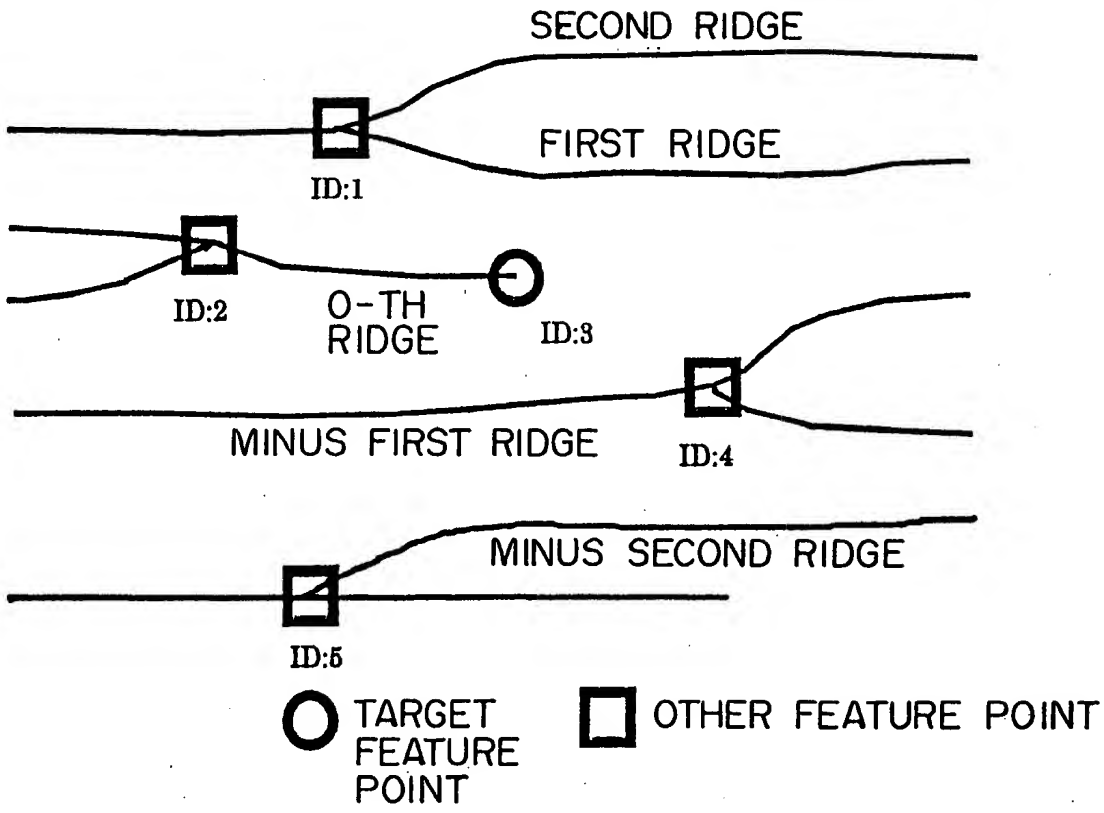

SECOND RIDGE
FIRST RIDGE
ID:1
ID:2
0-TH RIDGE
ID:3
MINUS FIRST RIDGE
ID:4
MINUS SECOND RIDGE
ID:5
TARGET FEATURE POINT
OTHER FEATURE POINT

FIG. 3

0095455 0095455

ID11
POSITION
TYPE
DIRECTION
O-TH : ID10 FIRST : ID9 SECOND : ID9 MINUS FIRST : ID12 MINUS SECOND : ID13
ID12
POSITION
TYPE
DIRECTION
O-TH : - - - - - - FIRST : - - - - - -

FIG. 4

006760"65T59960

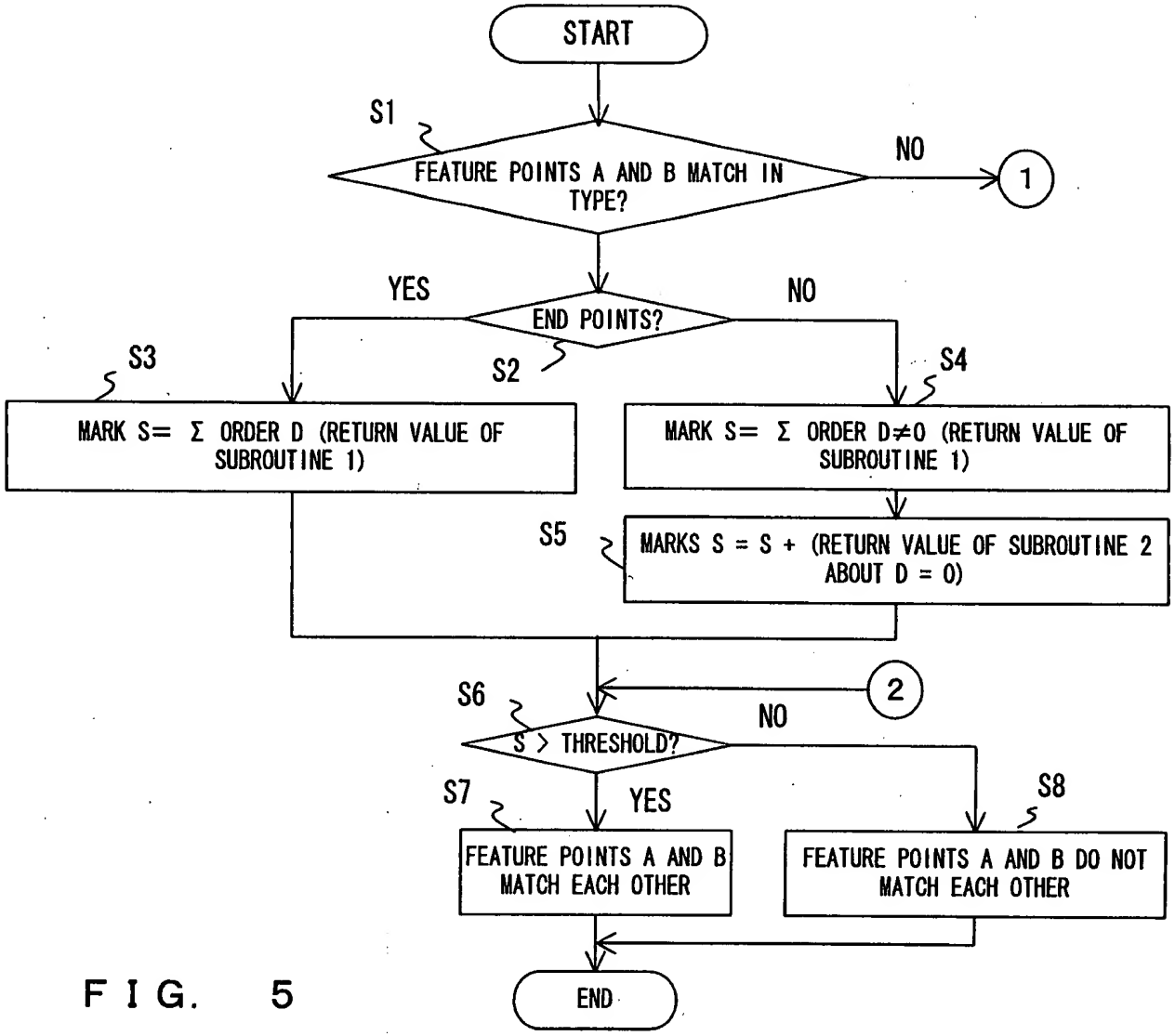


FIG. 5

0061-0515-0

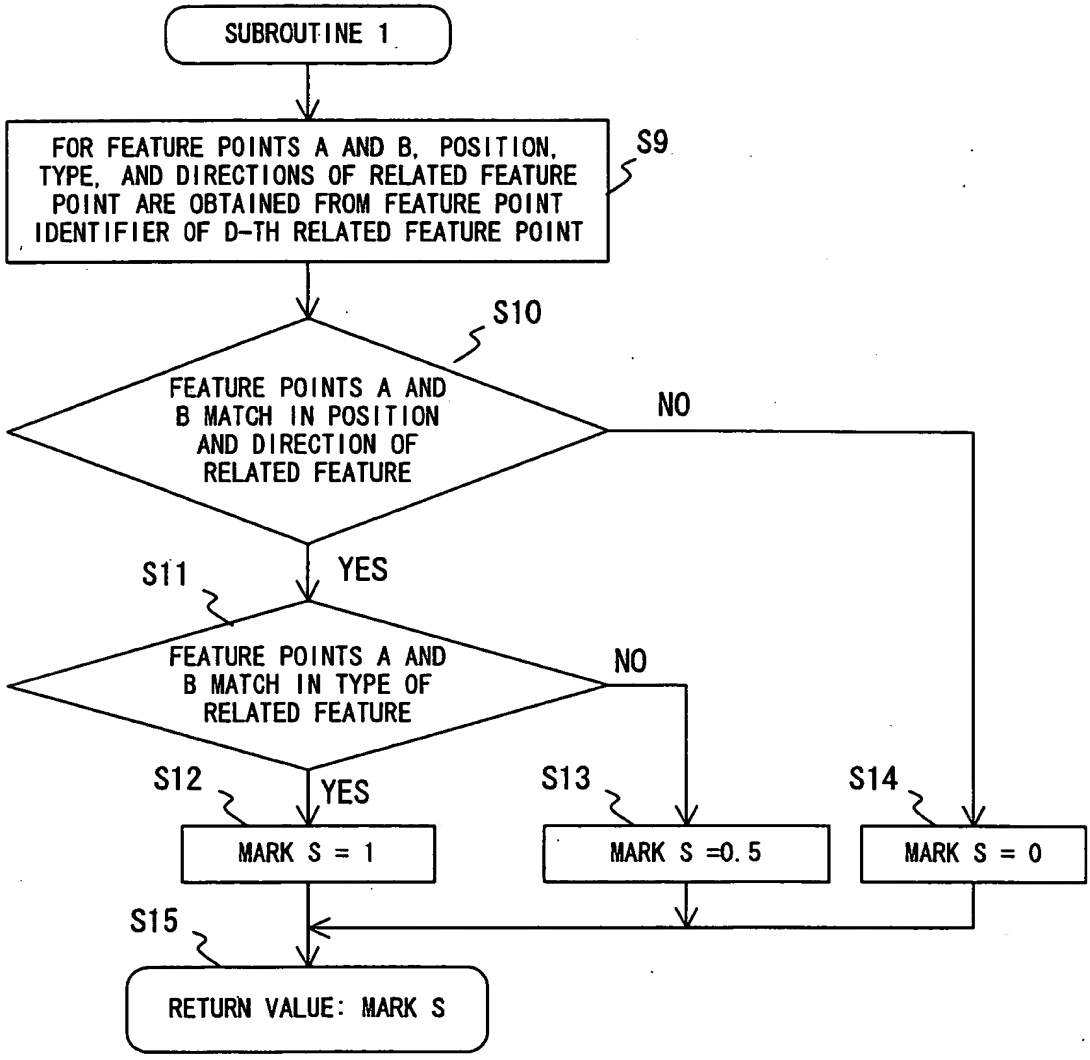


FIG. 6

0056-6050-6575950

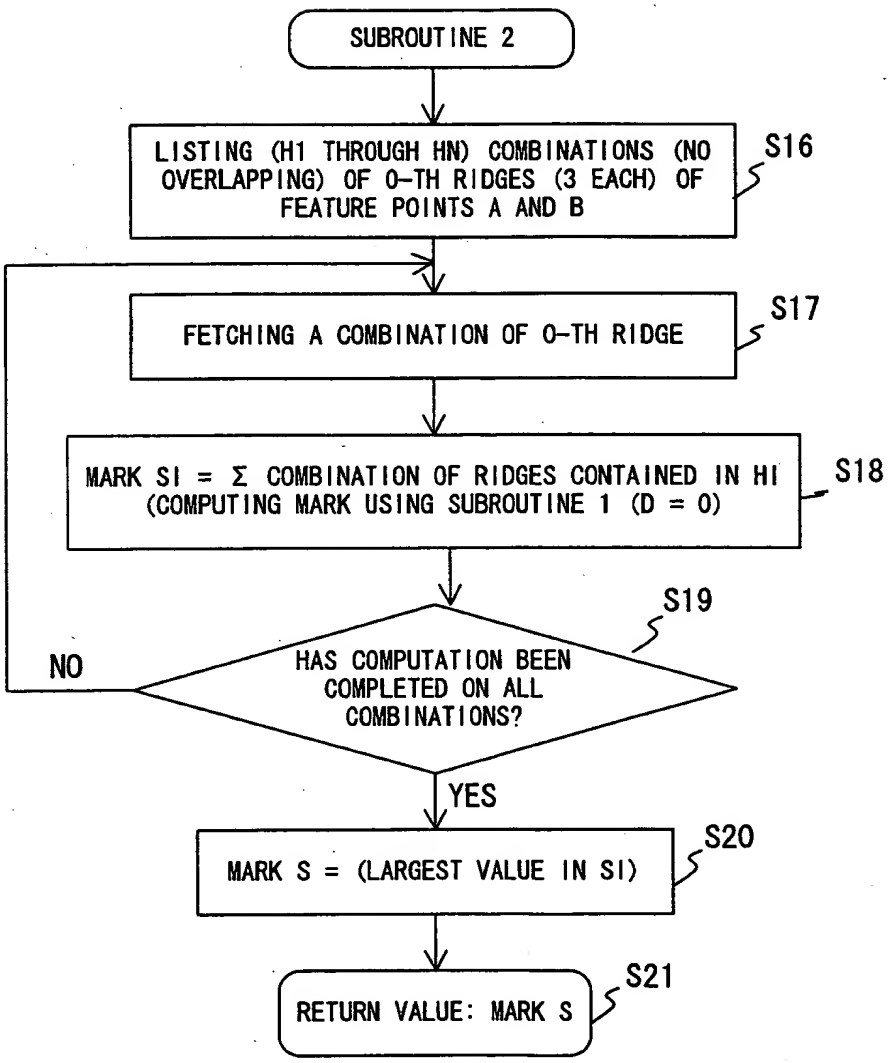


FIG. 7

0054595

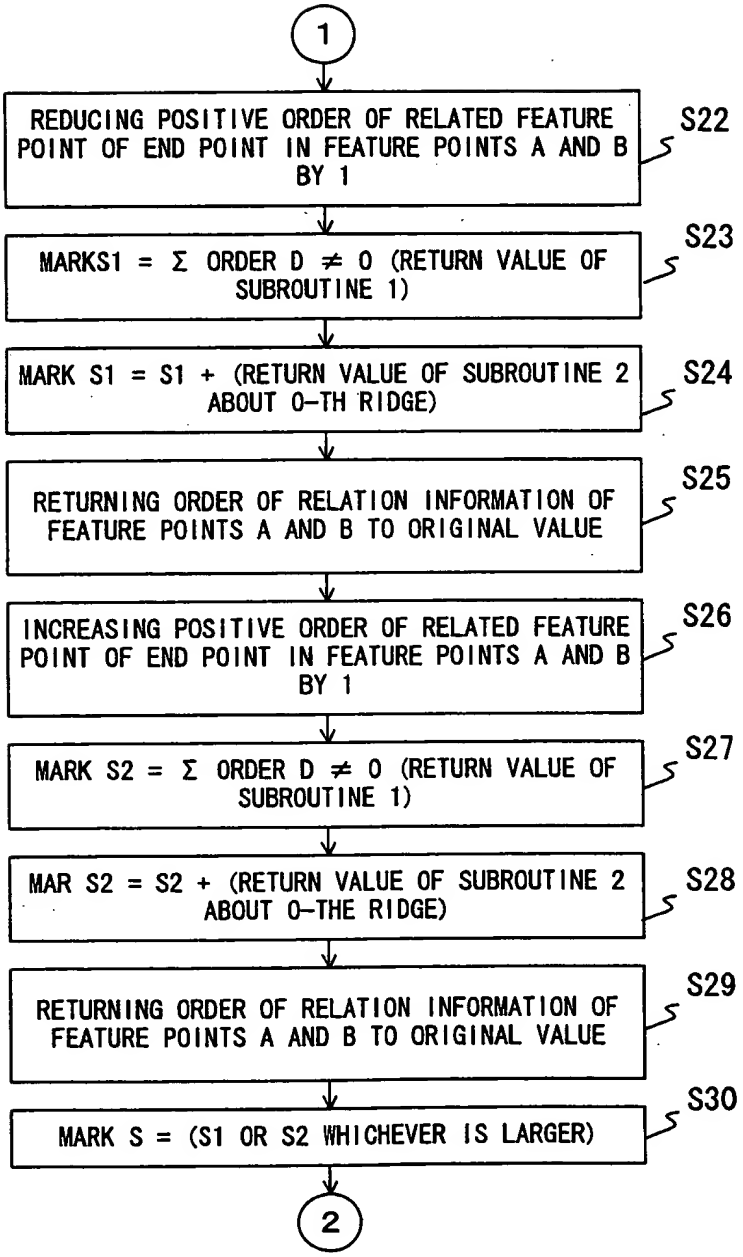


FIG. 8

006'650'651

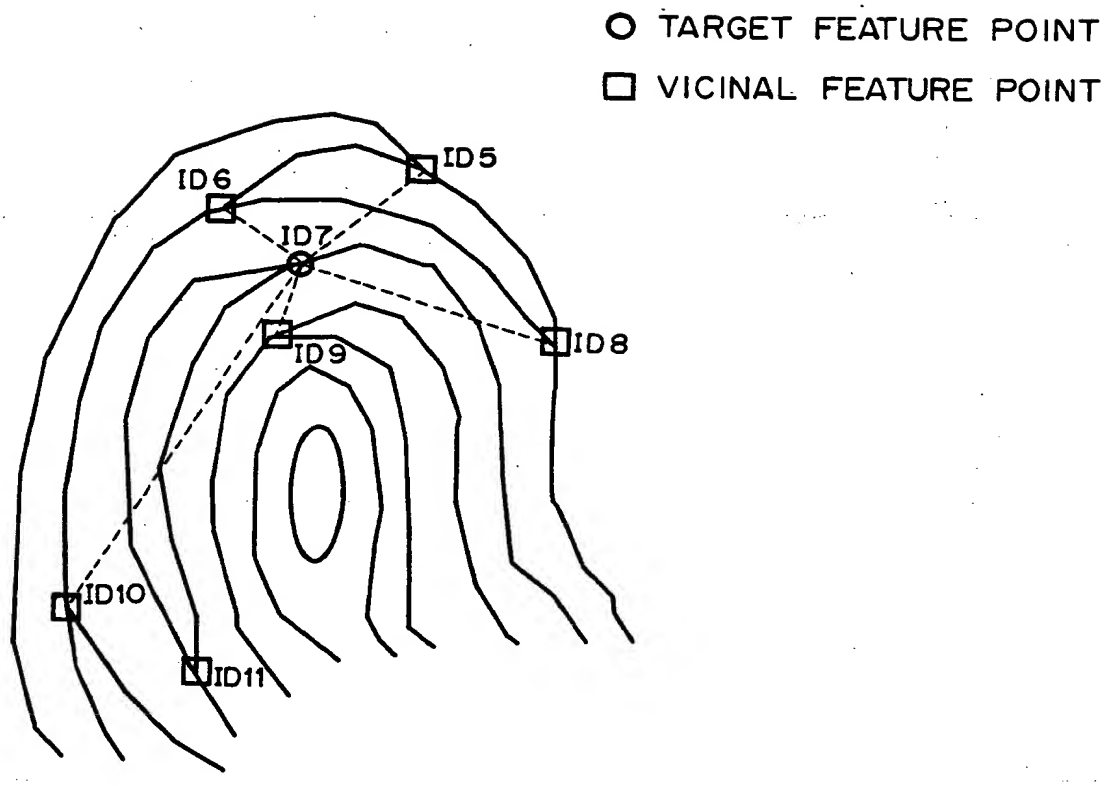


FIG. 9

0067609 '6ST5960

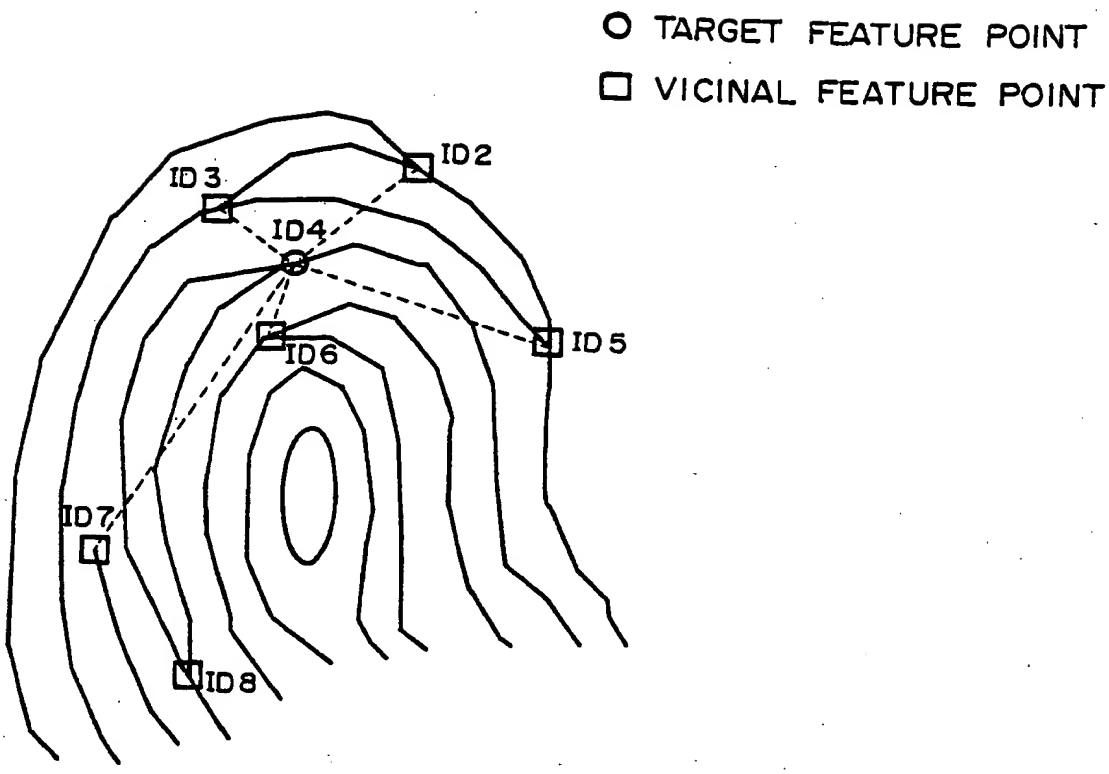


FIG. 10

0067607-5515960

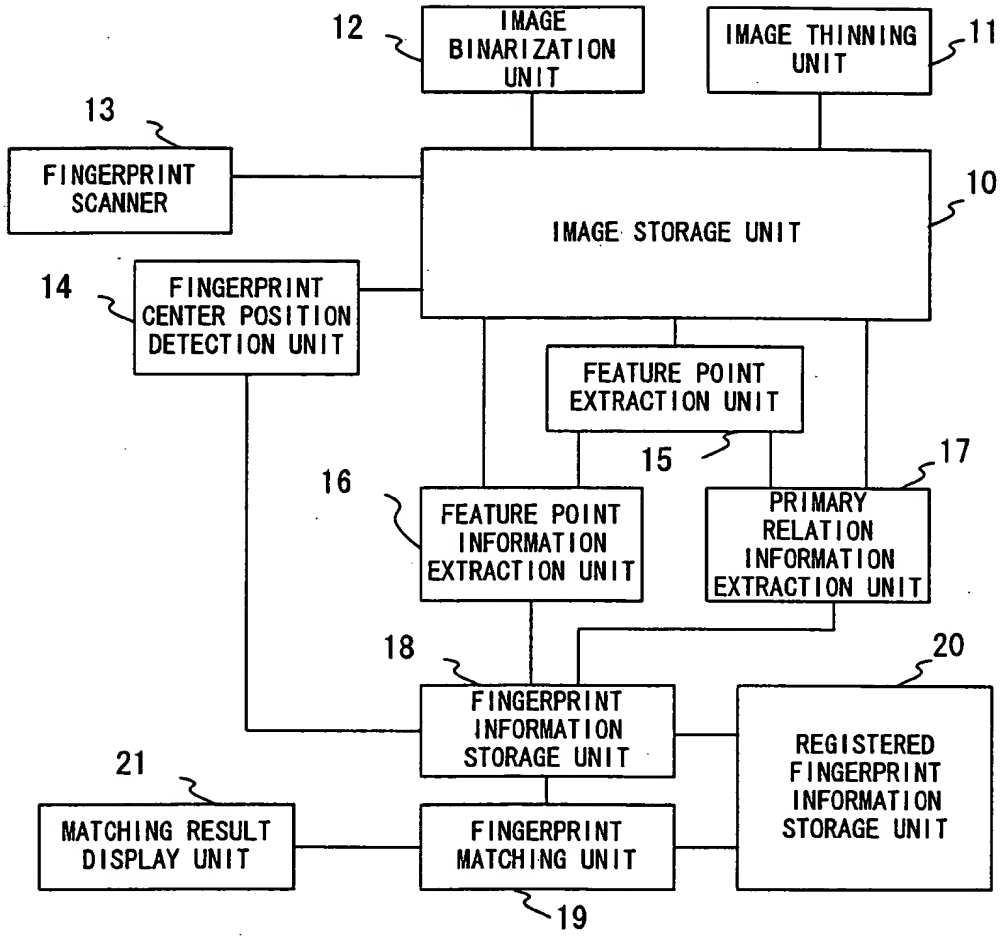


FIG. 11

0066450 6575960

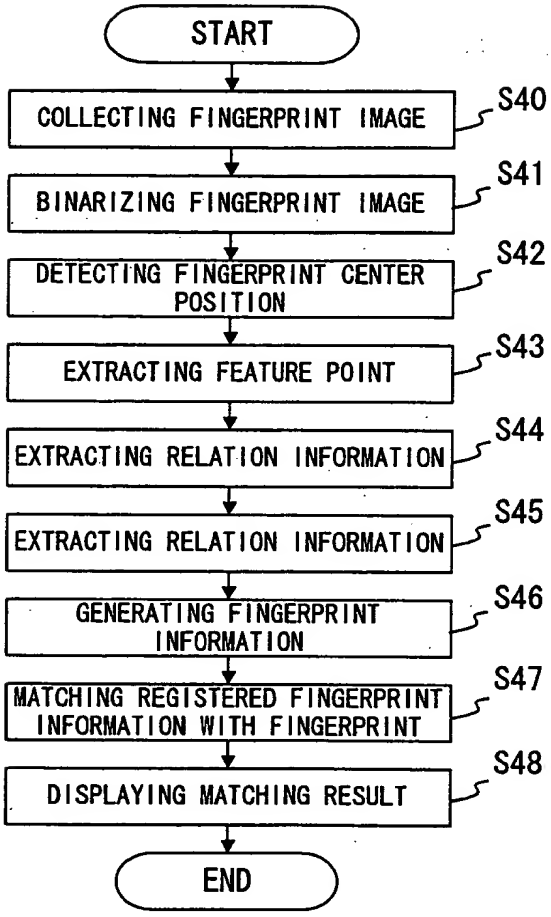


FIG. 12

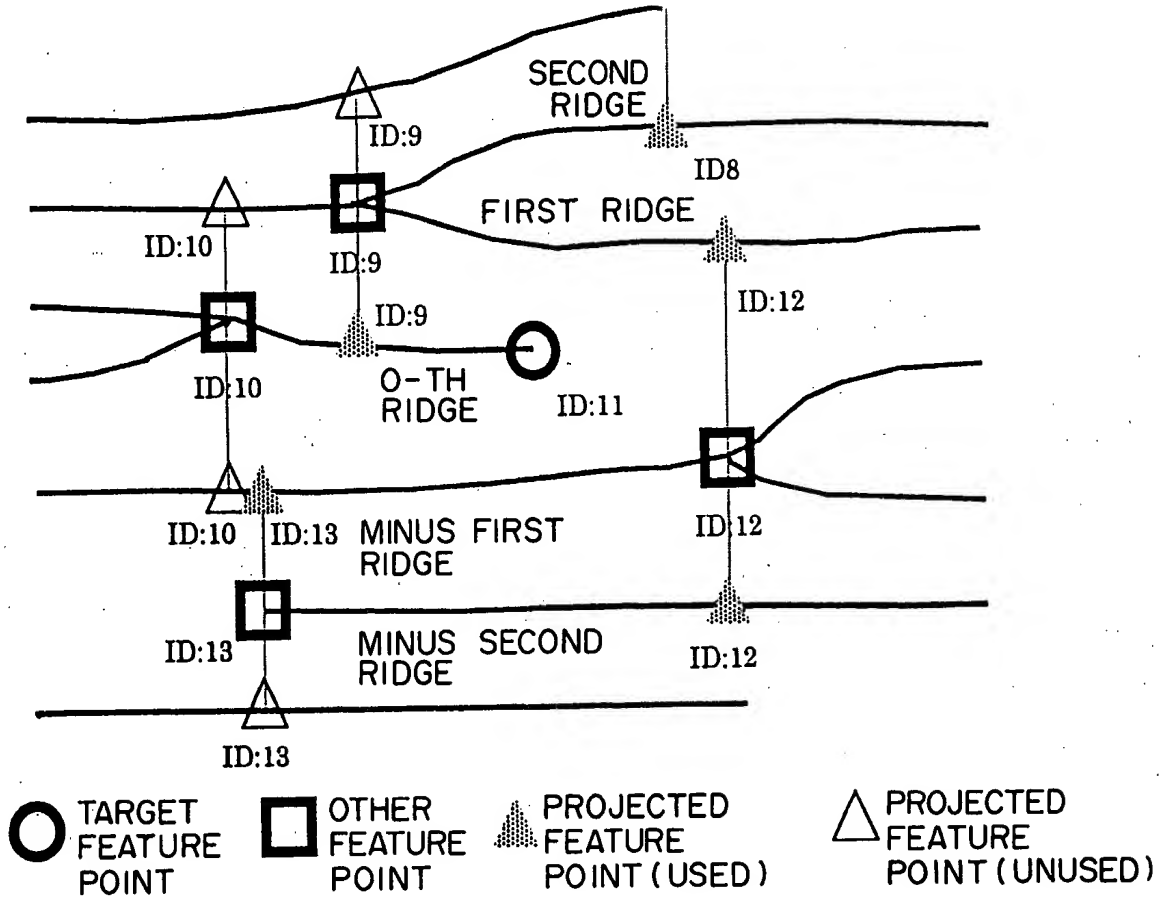

SECOND RIDGE
ID:9
ID8
FIRST RIDGE
ID:10
ID:9
ID:12
ID:9
ID:10
O-TH RIDGE
ID:11
ID:10
ID:13
MINUS FIRST RIDGE
ID:12
ID:13
MINUS SECOND RIDGE
ID:12
ID:13
TARGET FEATURE POINT
OTHER FEATURE POINT
PROJECTED FEATURE POINT (USED)
PROJECTED FEATURE POINT (UNUSED)

FIG. 13

006760 6515960

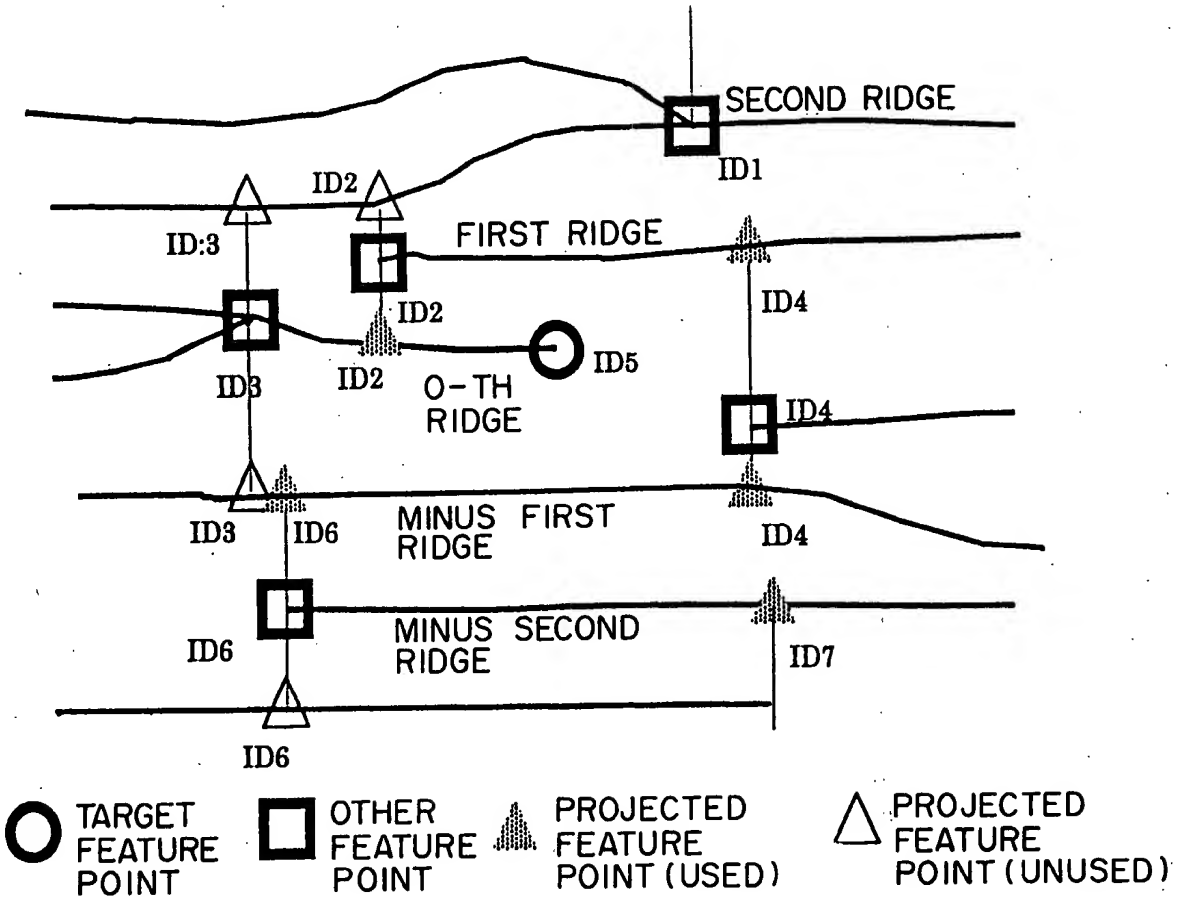


FIG. 14

0057650 05/15/96

ID 11
POSITION
TYPE
DIRECTION
0-TH VIRTUAL : ID 9 FIRST VIRTUAL : ID12 SECOND VIRTUAL : ID 8 MINUS FIRST VIRTUAL : ID13 MINUS SECOND VIRTUAL : ID12
ID 12
POSITION
TYPE
DIRECTION
⋮

FIG. 15

0054201 6515960

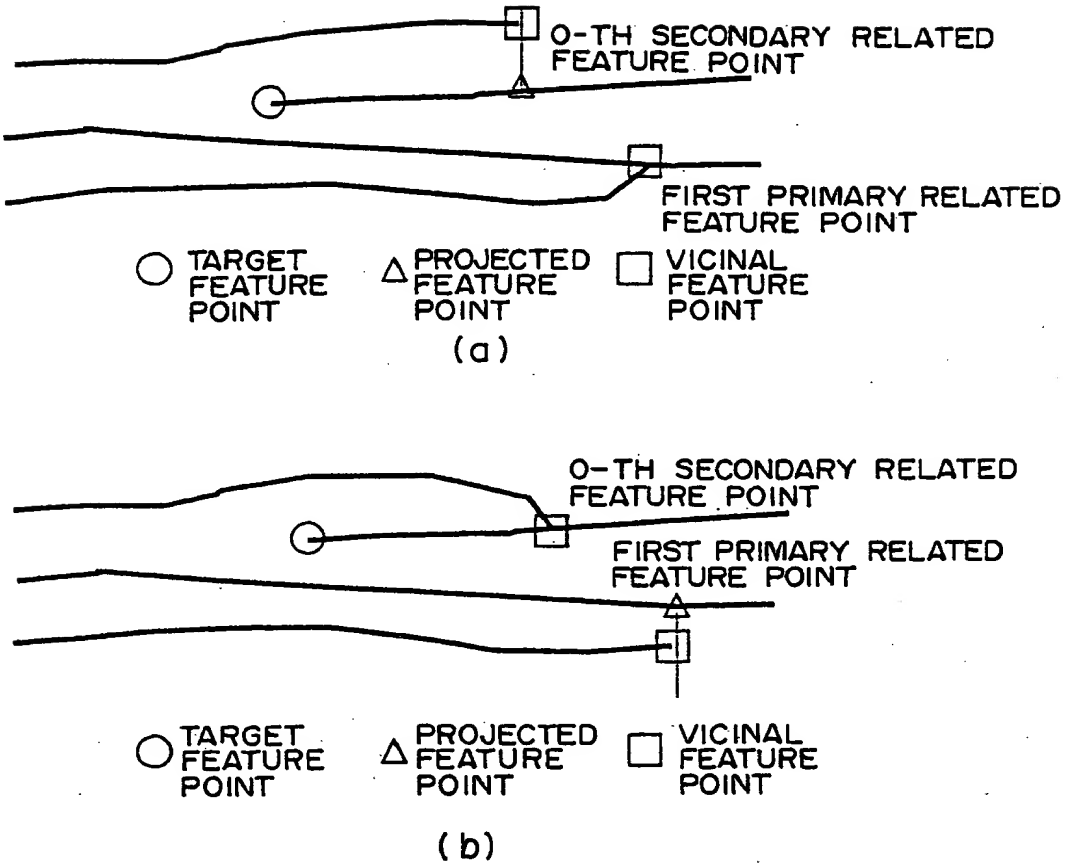
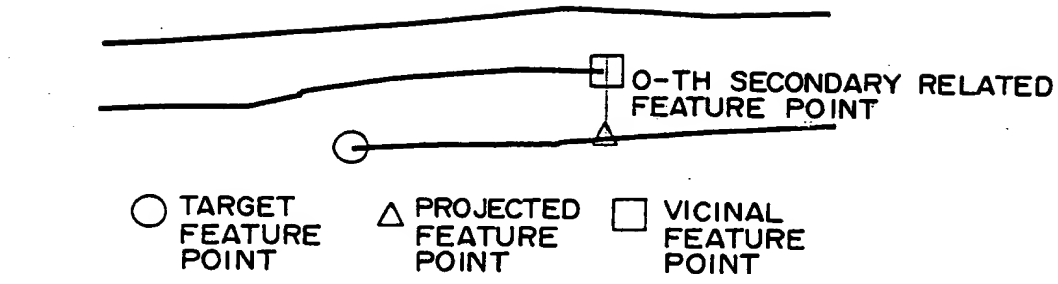
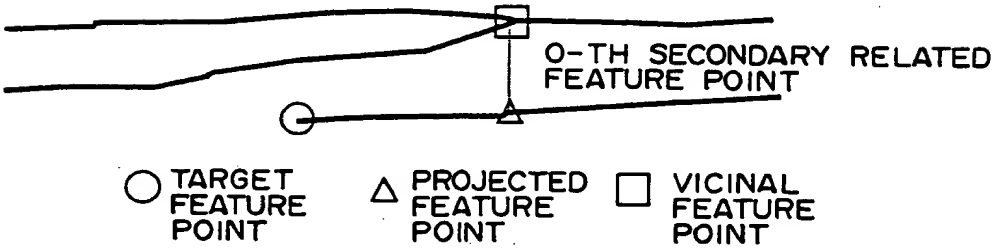


FIG. 16

0054-0055960



(a)



(b)

FIG. 17

0050-5750960

ID 11
POSITION
TYPE
DIRECTION
0-TH PRIMARY : ID 10 FIRST PRIMARY : ID 9 SECOND PRIMARY : ID 9 MINUS FIRST PRIMARY : ID 12 MINUS SECOND PRIMARY : ID 13 0-TH SECONDARY : ID 9 FIRST SECONDARY : ID 12 SECOND SECONDARY : ID 8 MINUS FIRST SECONDARY : ID 13 MINUS SECOND SECONDARY : ID 12
ID 12
⋮

FIG. 18

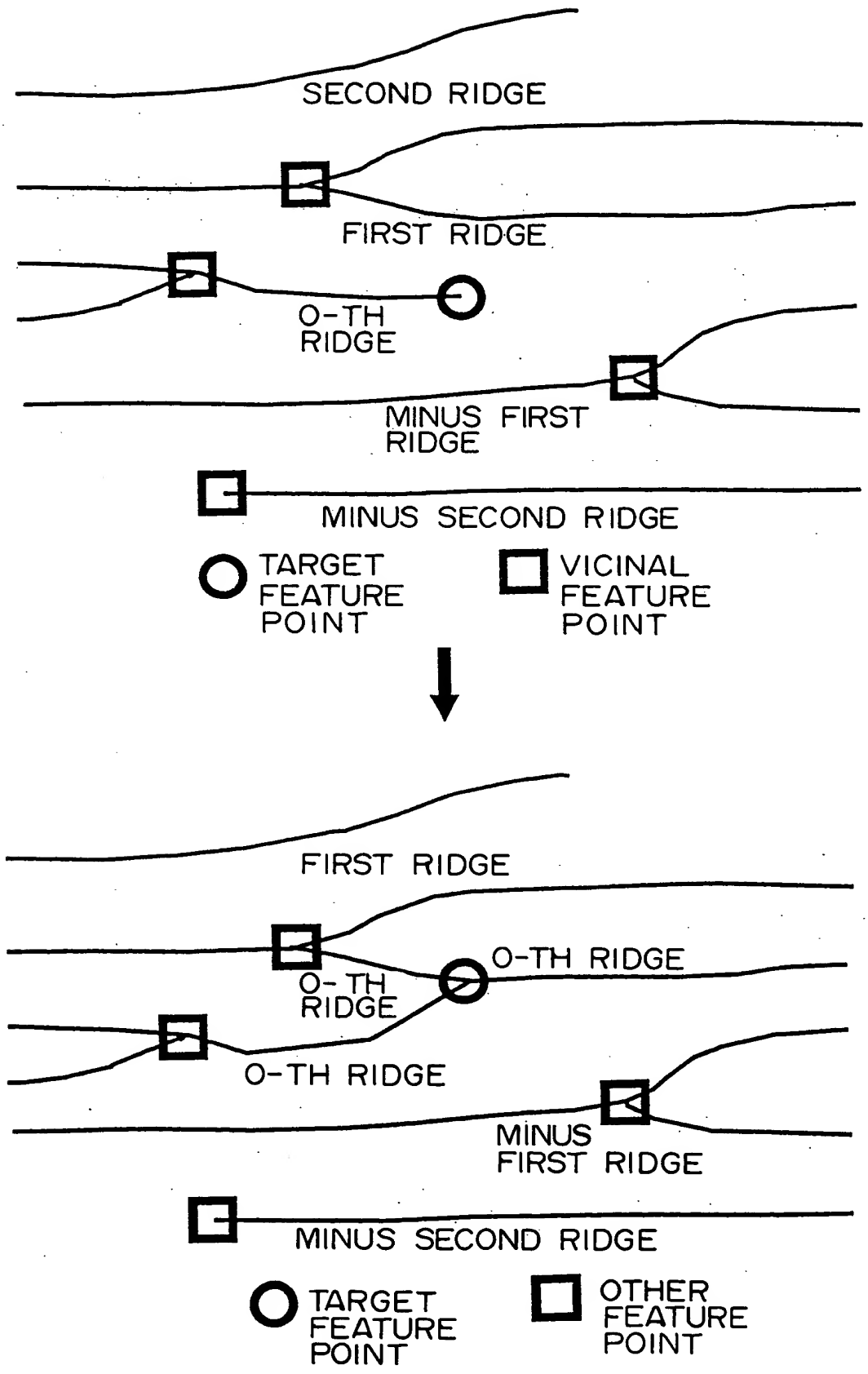


FIG. 19

0055150 06/19/00

006760"6STS9960

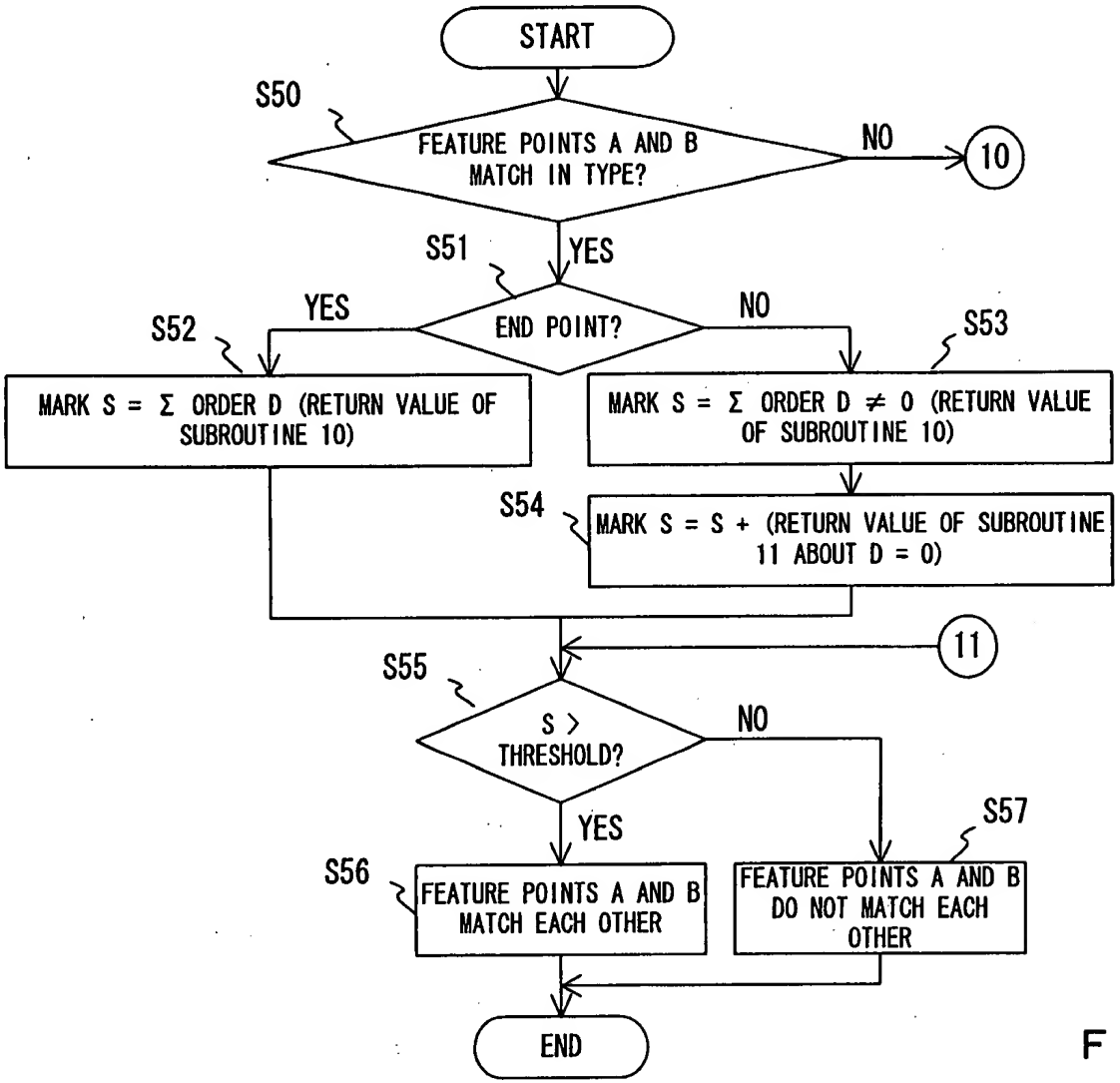


FIG. 20

0065450 · 5555950

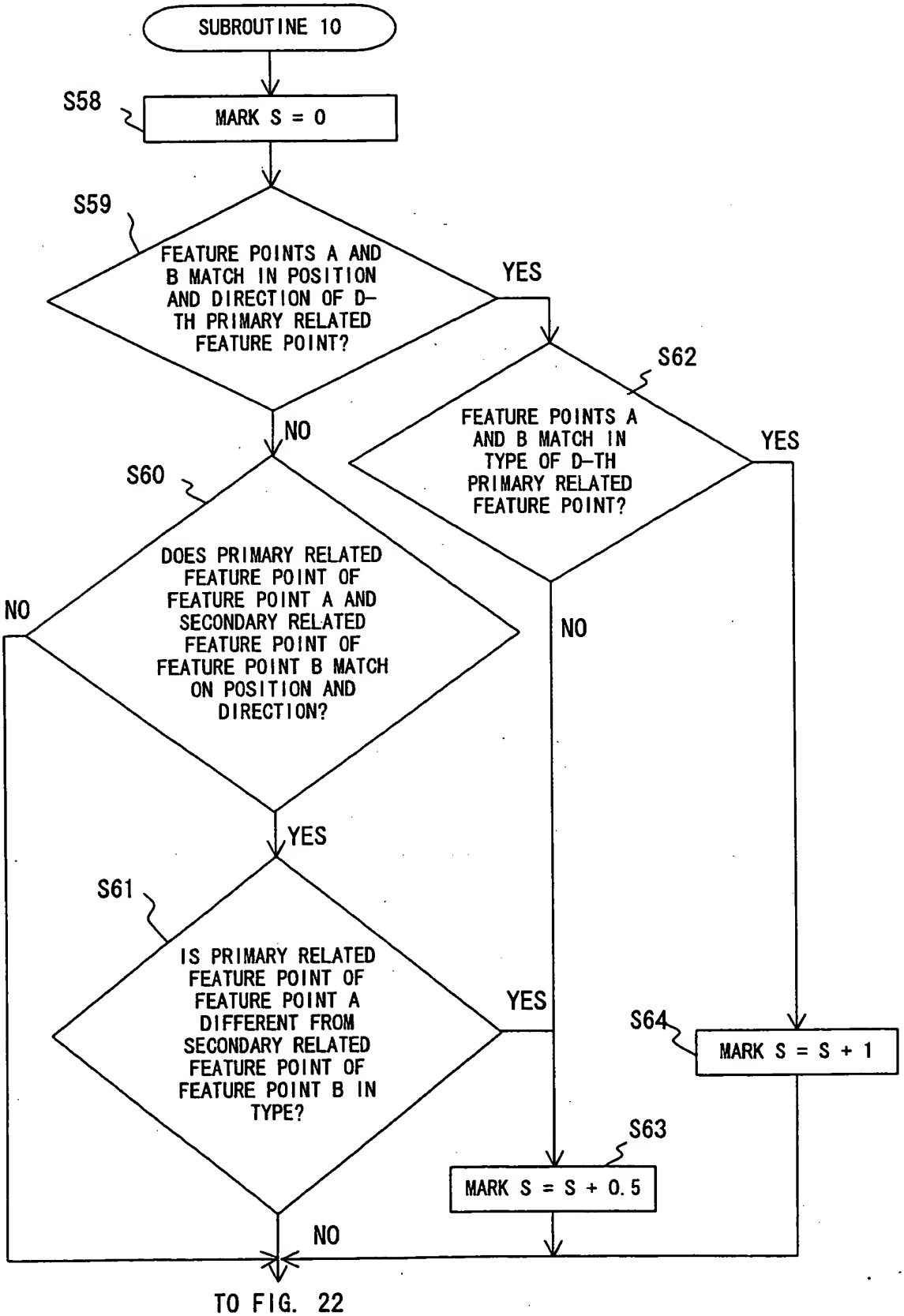


FIG. 21

0067650-6515960

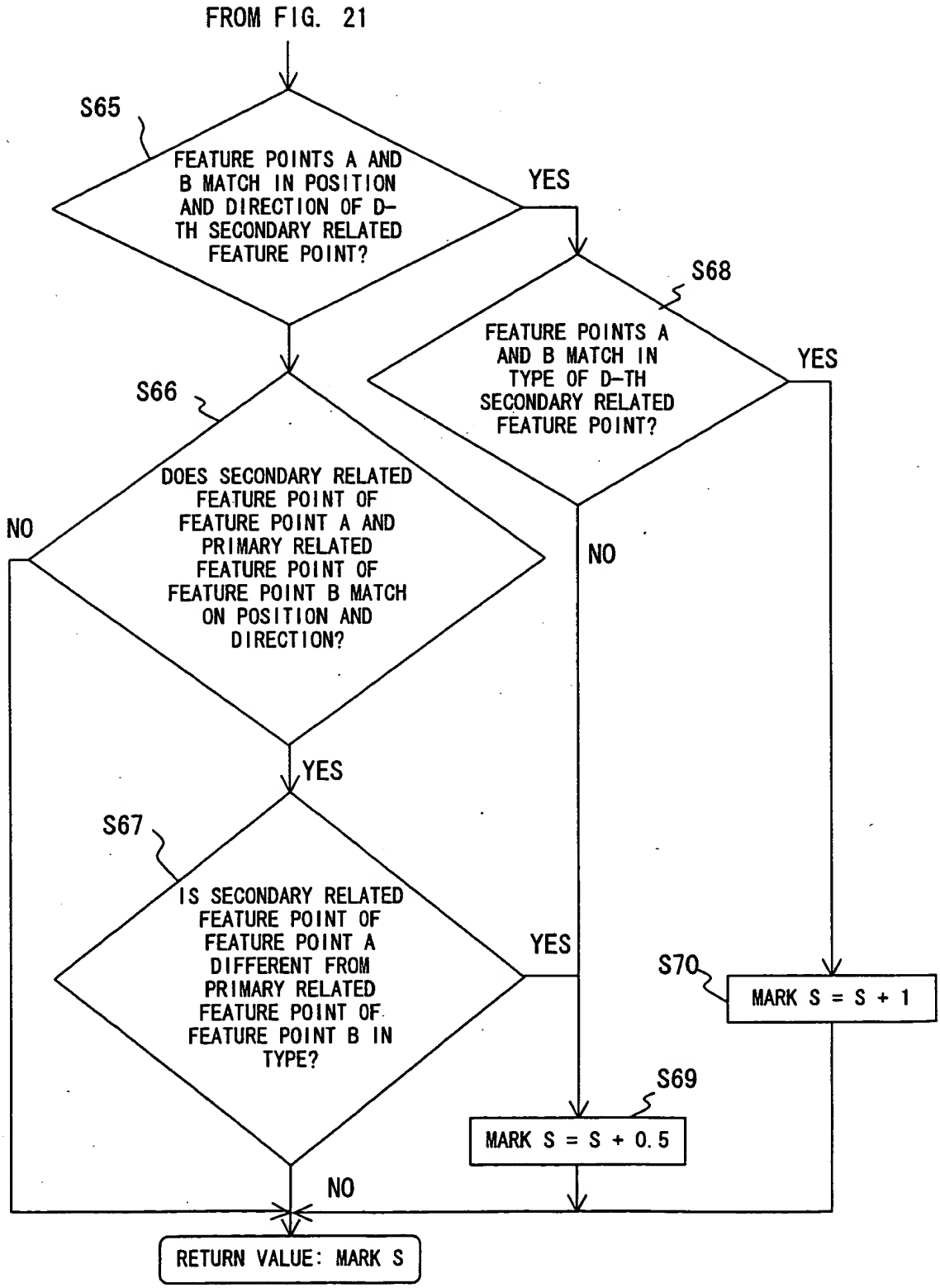


FIG. 22

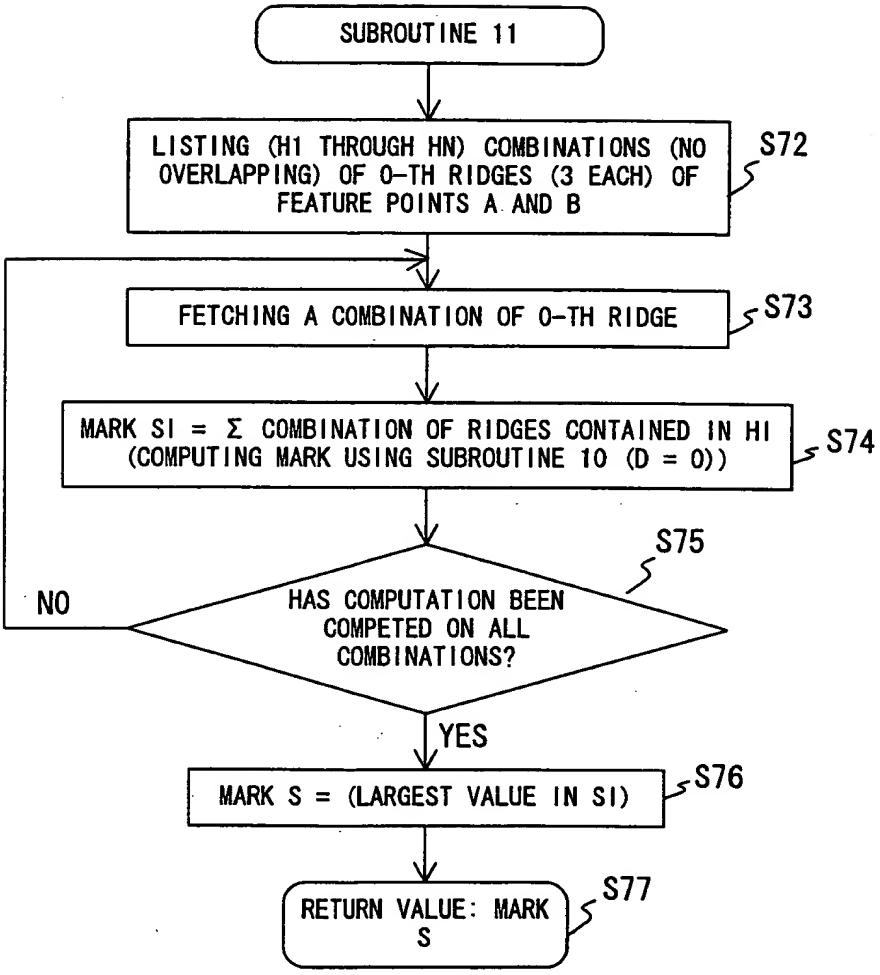


FIG. 23

0956545.050900

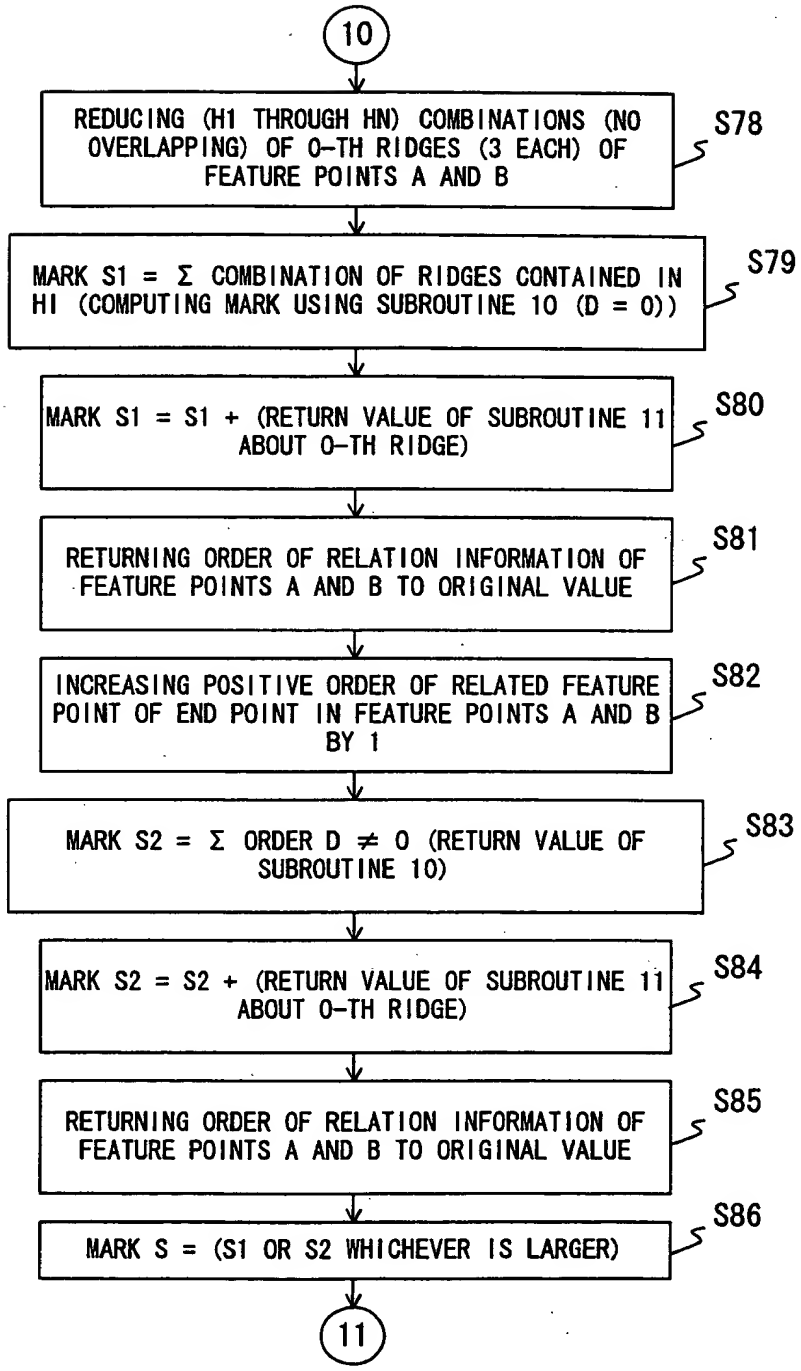


FIG. 24

0057507 5575960

0056259

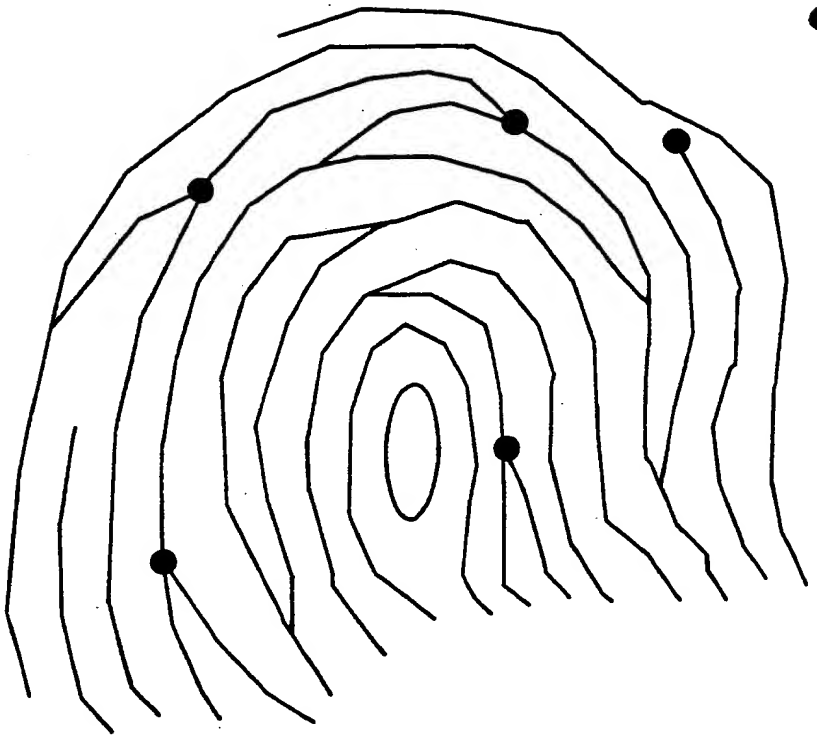


FIG. 25

0060'65T5960

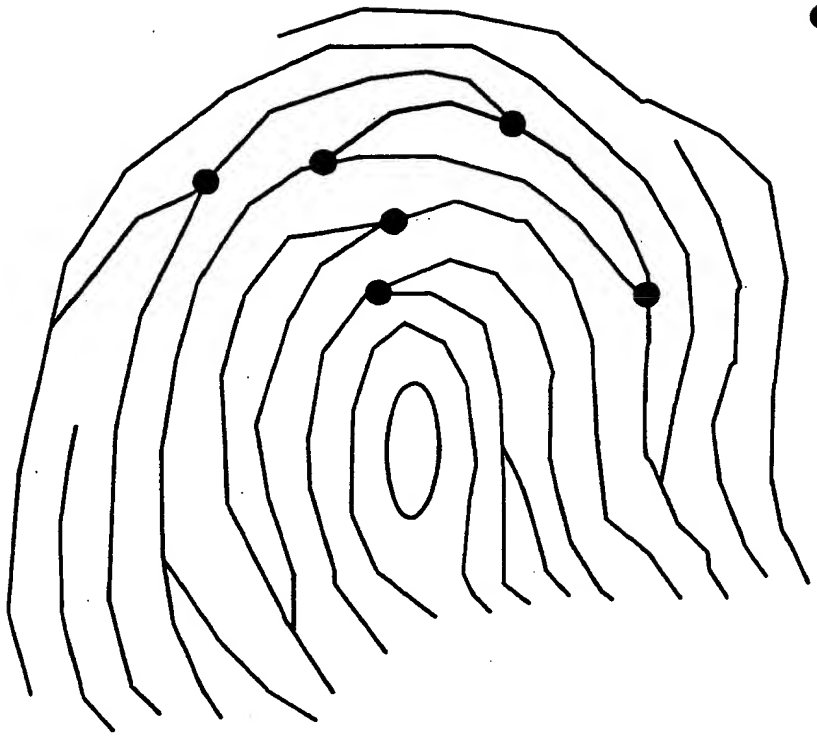


FIG. 26

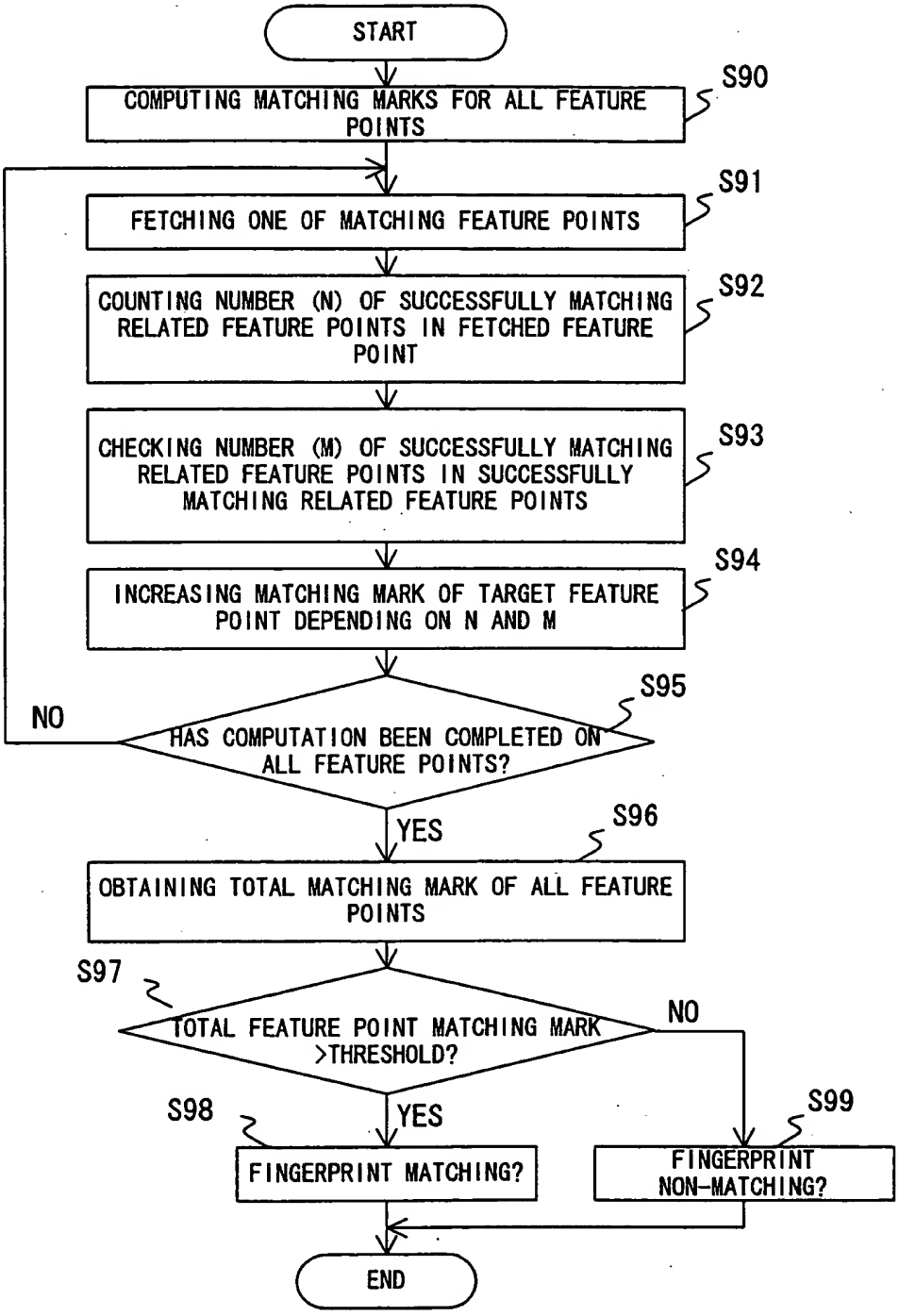

START
COMPUTING MATCHING MARKS FOR ALL FEATURE POINTS
S90
FETCHING ONE OF MATCHING FEATURE POINTS
S91
COUNTING NUMBER (N) OF SUCCESSFULLY MATCHING RELATED FEATURE POINTS IN FETCHED FEATURE POINT
S92
CHECKING NUMBER (M) OF SUCCESSFULLY MATCHING RELATED FEATURE POINTS IN SUCCESSFULLY MATCHING RELATED FEATURE POINTS
S93
INCREASING MATCHING MARK OF TARGET FEATURE POINT DEPENDING ON N AND M
S94
HAS COMPUTATION BEEN COMPLETED ON ALL FEATURE POINTS?
S95
NO
YES
OBTAINING TOTAL MATCHING MARK OF ALL FEATURE POINTS
S96
TOTAL FEATURE POINT MATCHING MARK >THRESHOLD?
S97
NO
YES
FINGERPRINT MATCHING?
S98
FINGERPRINT NON-MATCHING?
S99
END

FIG. 27

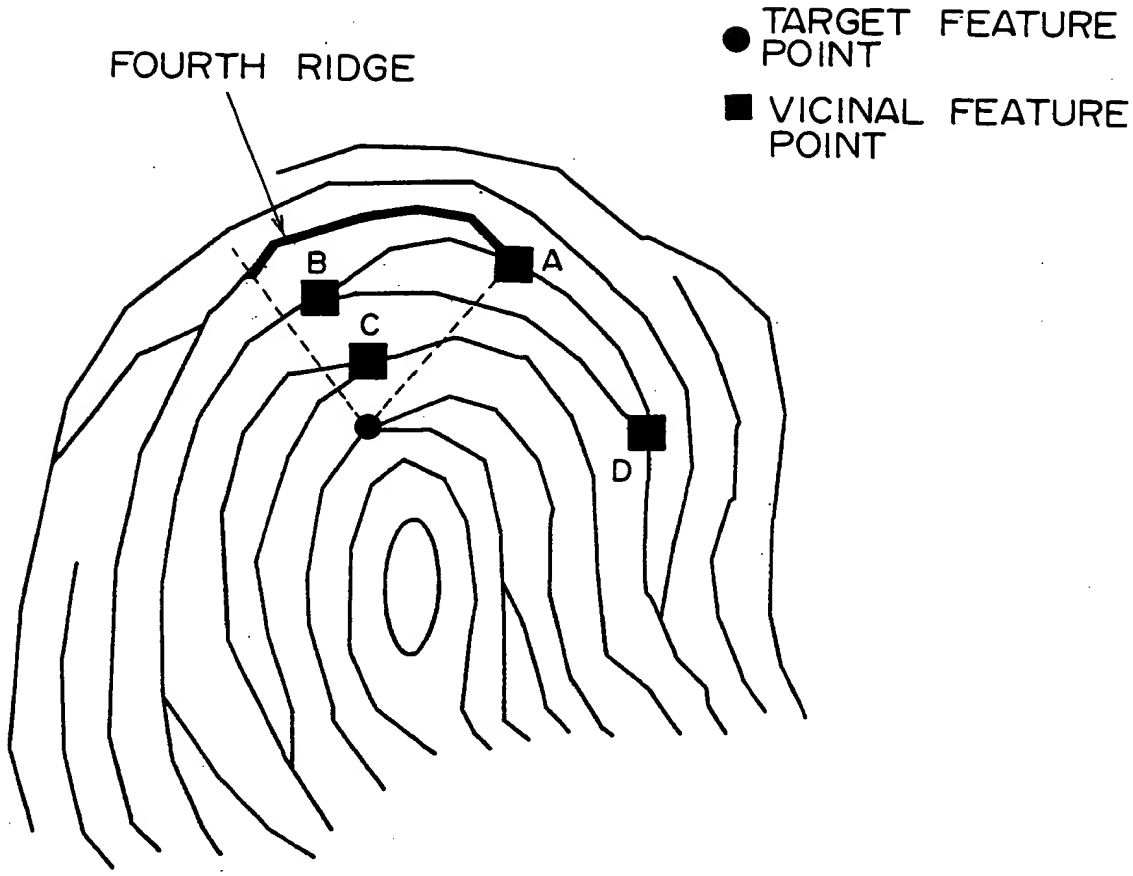

TARGET FEATURE POINT
VICINAL FEATURE POINT
FOURTH RIDGE
A
B
C
D

FIG. 28

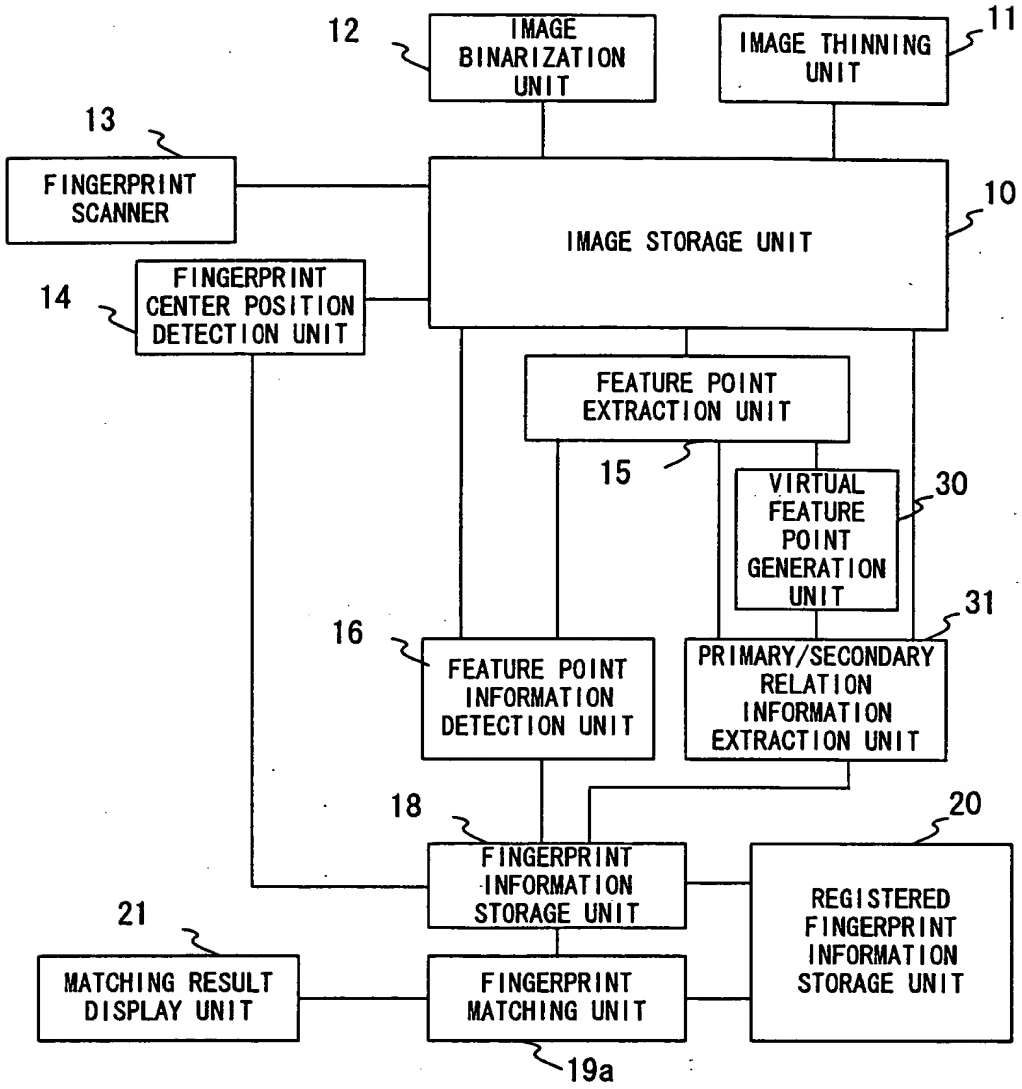

12
IMAGE BINARIZATION UNIT
IMAGE THINNING UNIT
11
13
FINGERPRINT SCANNER
IMAGE STORAGE UNIT
10
14
FINGERPRINT CENTER POSITION DETECTION UNIT
FEATURE POINT EXTRACTION UNIT
15
VIRTUAL FEATURE POINT GENERATION UNIT
30
31
16
FEATURE POINT INFORMATION DETECTION UNIT
PRIMARY/SECONDARY RELATION INFORMATION EXTRACTION UNIT
18
20
FINGERPRINT INFORMATION STORAGE UNIT
REGISTERED FINGERPRINT INFORMATION STORAGE UNIT
21
MATCHING RESULT DISPLAY UNIT
FINGERPRINT MATCHING UNIT
19a

FIG. 29

0095545.0

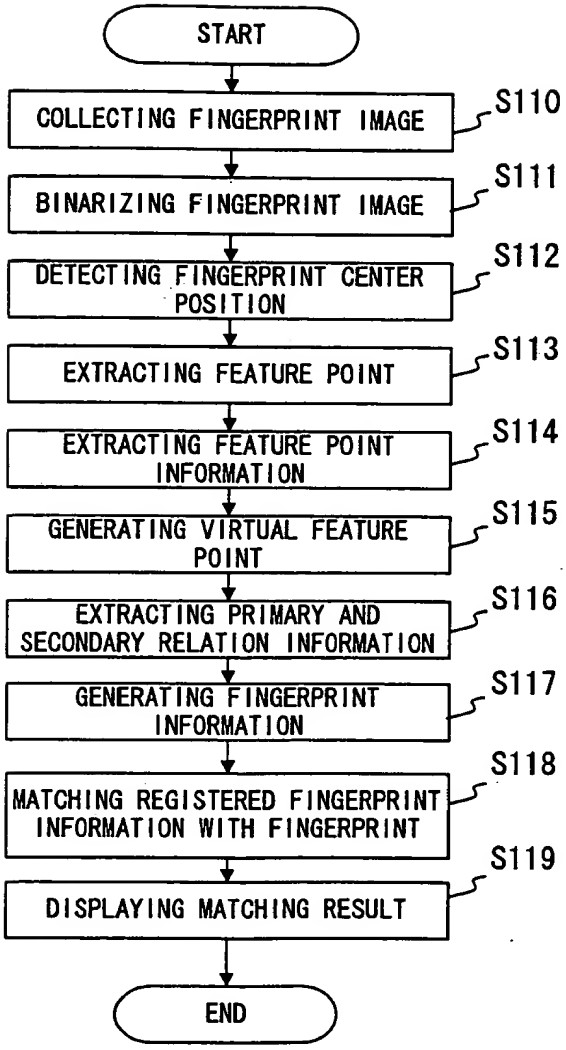


FIG. 30

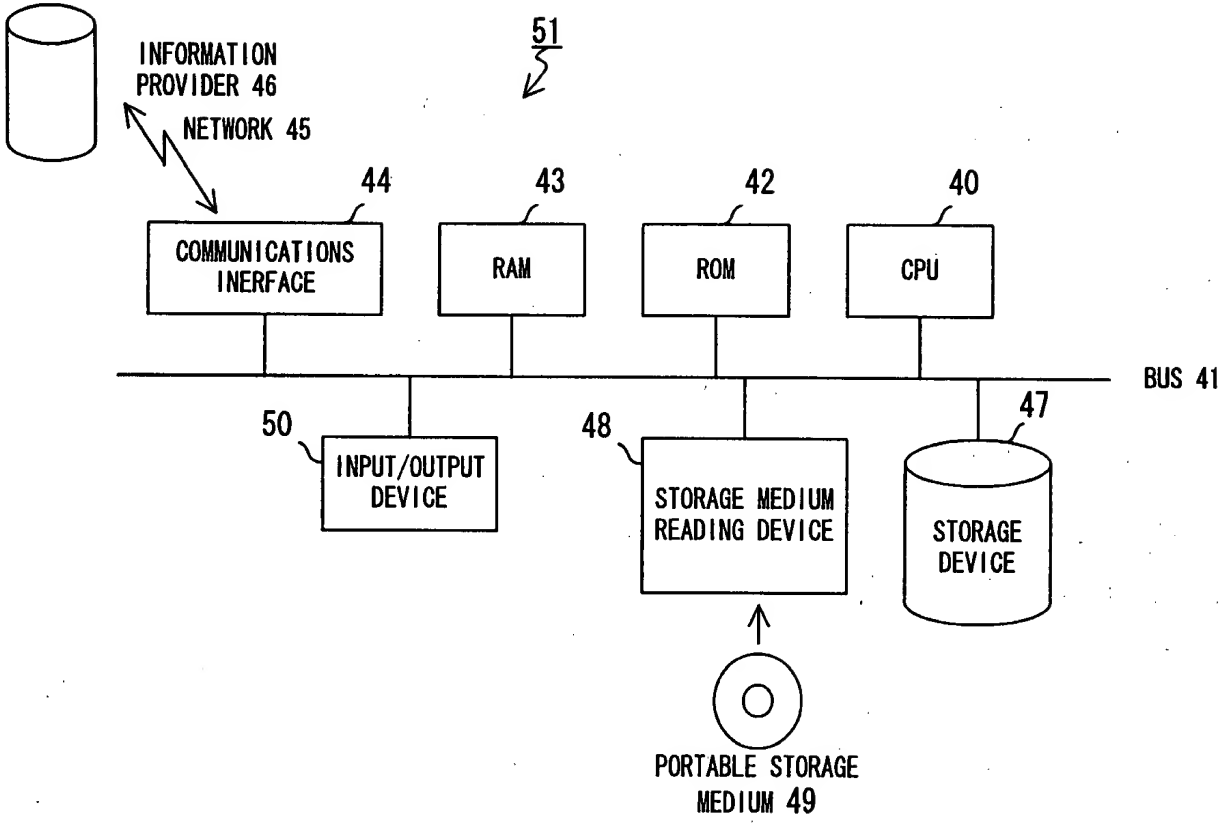

INFORMATION PROVIDER 46
NETWORK 45
51
44
43
42
40
COMMUNICATIONS INERFACE
RAM
ROM
CPU
BUS 41
50
48
47
INPUT/OUTPUT DEVICE
STORAGE MEDIUM READING DEVICE
STORAGE DEVICE
PORTABLE STORAGE MEDIUM 49

FIG. 31